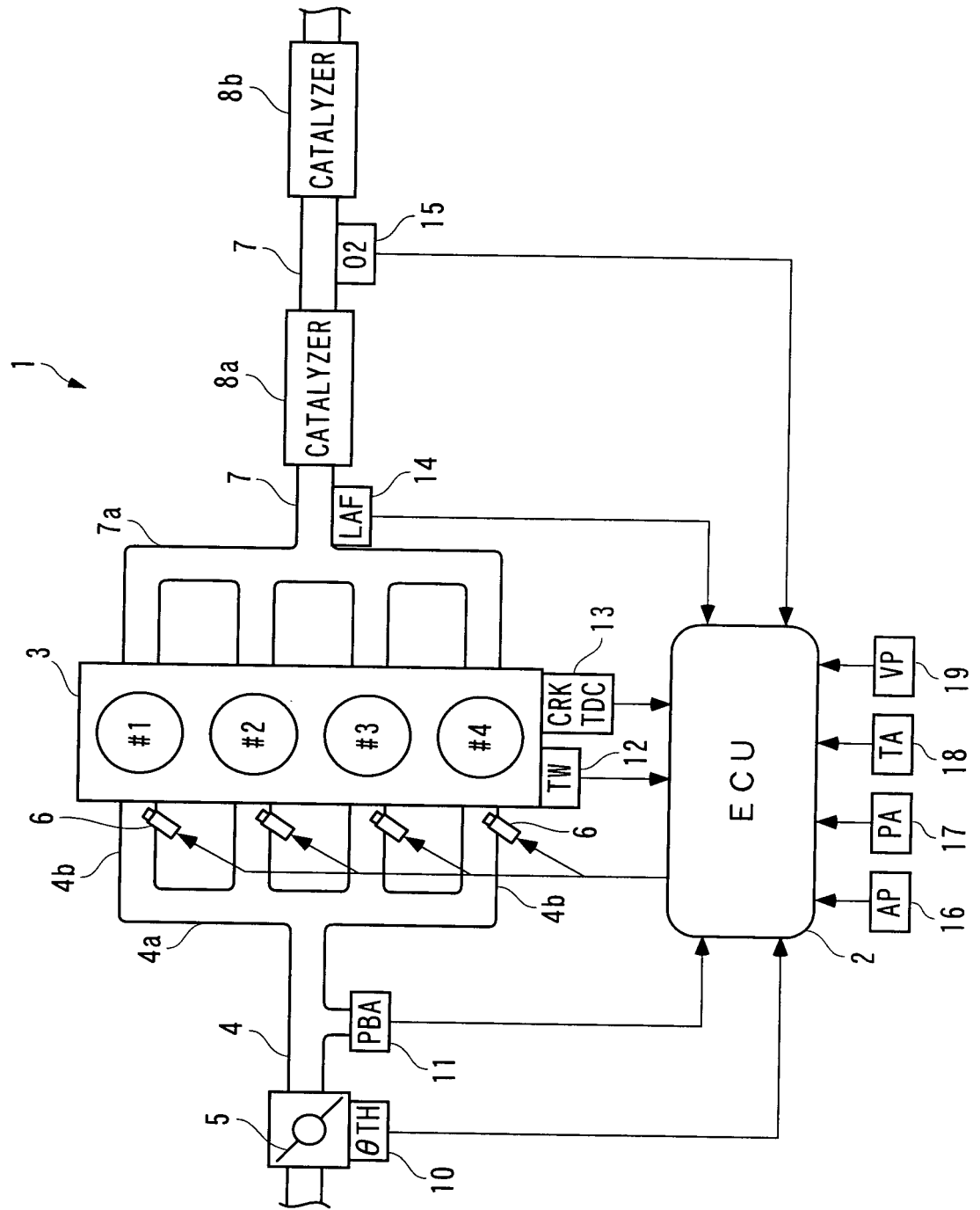
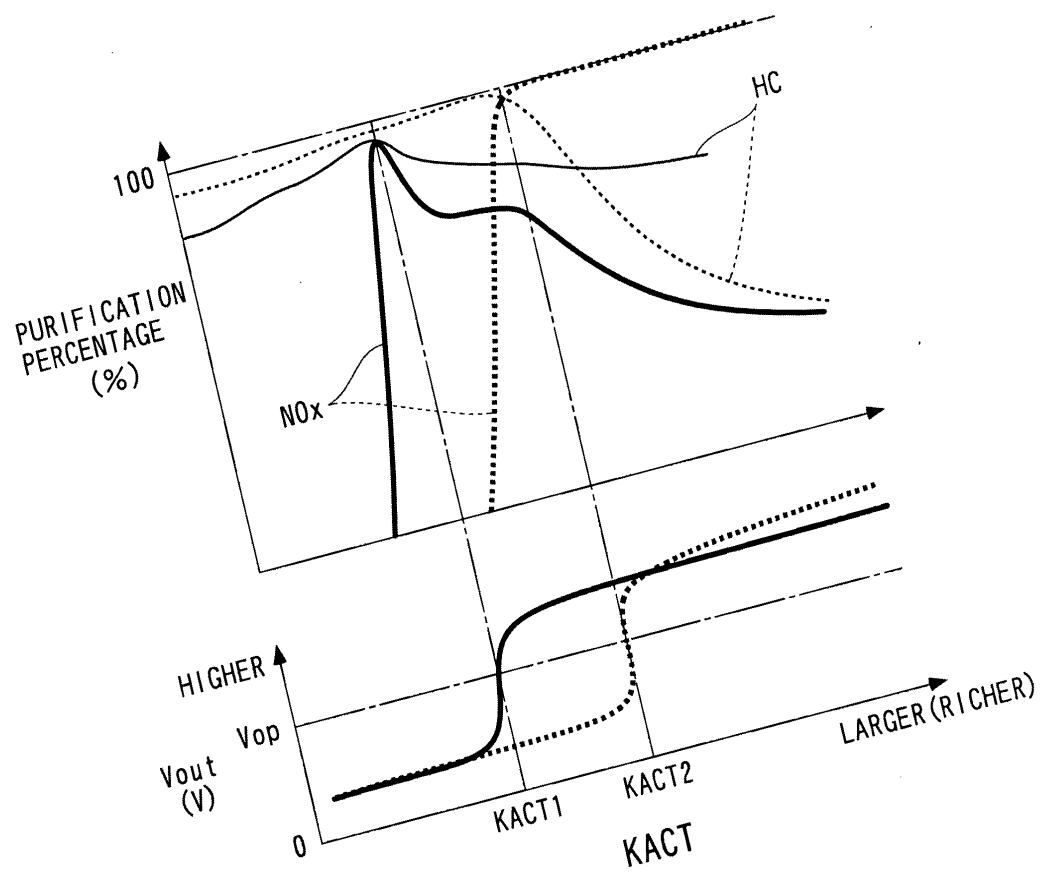


FIG. 1

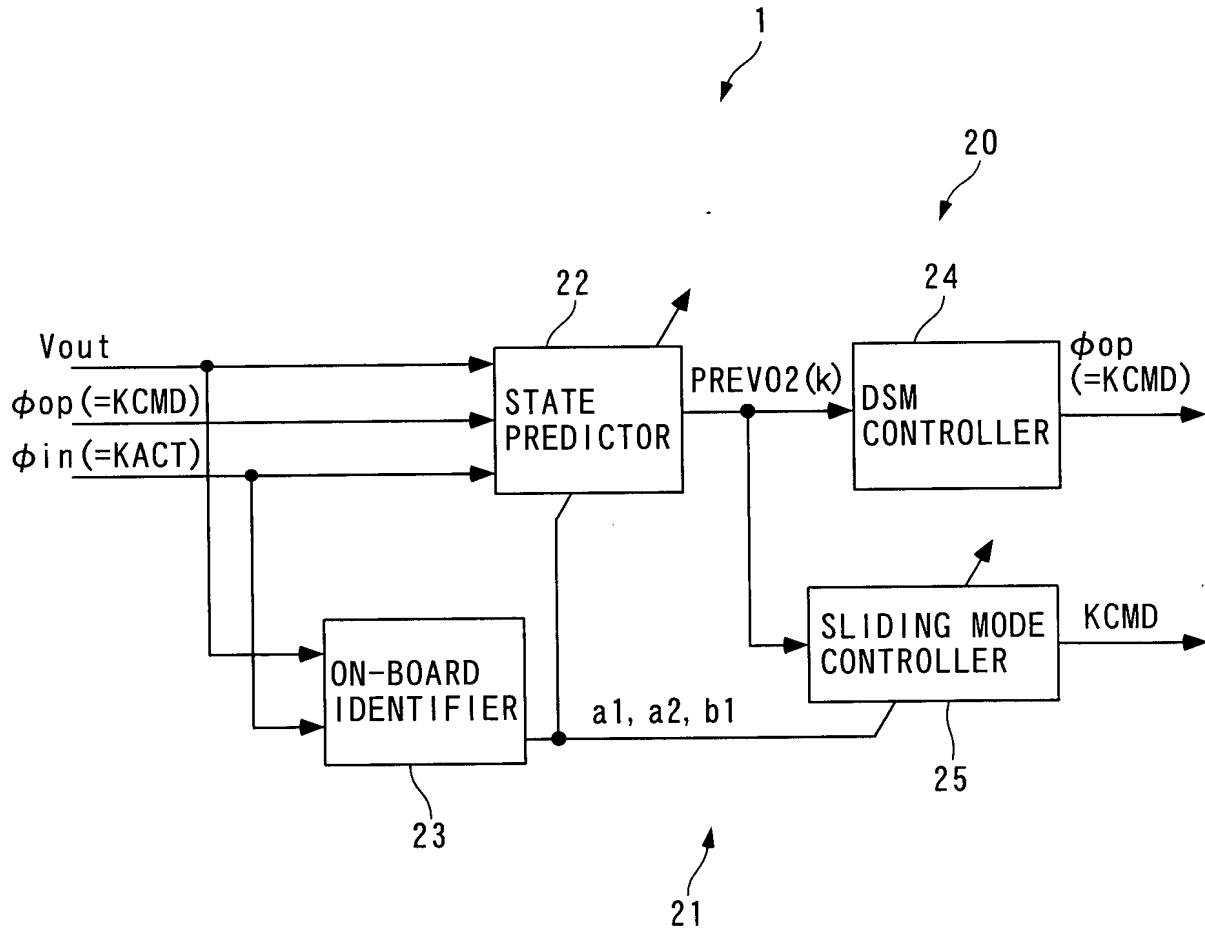


H02-2350

FIG. 2



F I G . 3



F I G. 4

$$A = \begin{bmatrix} a1 & a2 \\ 1 & 0 \end{bmatrix} \quad \dots\dots (4)$$

$$B = \begin{bmatrix} b1 \\ 0 \end{bmatrix} \quad \dots\dots (5)$$

$$PREV02(k) = \alpha 1 \cdot V02(k) + \alpha 2 \cdot V02(k-1) + \sum_{i=1}^{dt} \beta i \cdot DKCMD(k-i) \quad \dots\dots (6)$$

Where $\alpha 1$: One-row, one-column element of A^{dt} ;
 $\alpha 2$: One-row, two-column element of A^{dt} ; and
 βi : One-row element of $A^{i-1}B$.

$$PREV02(k) = \alpha 1 \cdot V02(k) + \alpha 2 \cdot V02(k-1) + \sum_{i=1}^{d'-1} \beta i \cdot DKCMD(k-i) + \sum_{j=d'}^{dt} \beta j \cdot DKACT(k-j) \quad \dots\dots (7)$$

Where βj : One-row element of $A^{j-1}B$.

F I G. 5

$$\theta(k) = \theta(k-1) + KP(k) \cdot ide_f(k) \quad \dots\dots (8)$$

$$\theta(k)^T = [a1'(k), a2'(k), b1'(k)] \quad \dots\dots (9)$$

$$ide_f(k) = \frac{1}{n} \sum_{i=1}^n ide(i) \quad \dots\dots (10)$$

$$ide(k) = V02(k) - V02HAT(k) \quad \dots\dots (11)$$

$$V02HAT(k) = \theta(k-1)^T \zeta(k) \quad \dots\dots (12)$$

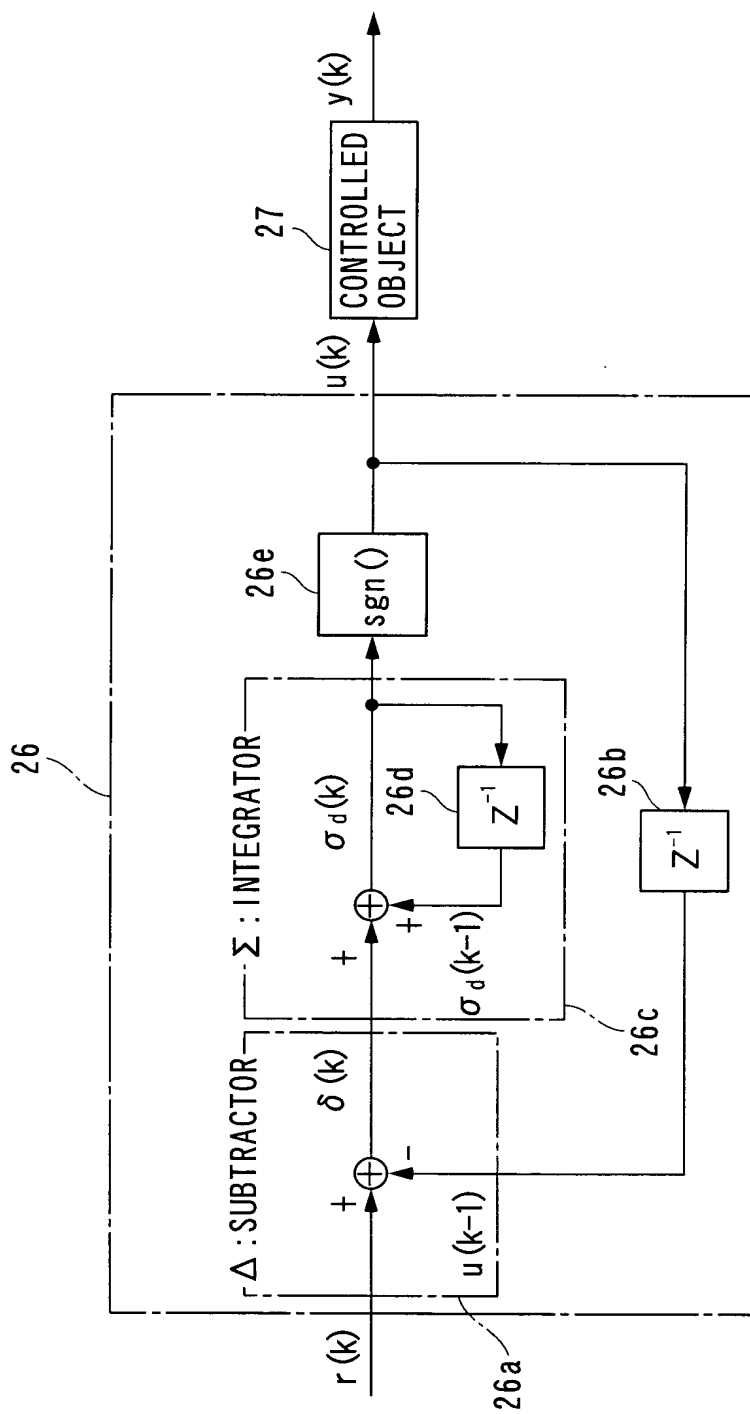
$$\zeta(k)^T = [V02(k-1), V02(k-2), DKACT(k-d-dd)] \quad \dots\dots (13)$$

$$KP(k) = \frac{P(k) \zeta(k)}{1 + \zeta(k)^T P(k) \zeta(k)} \quad \dots\dots (14)$$

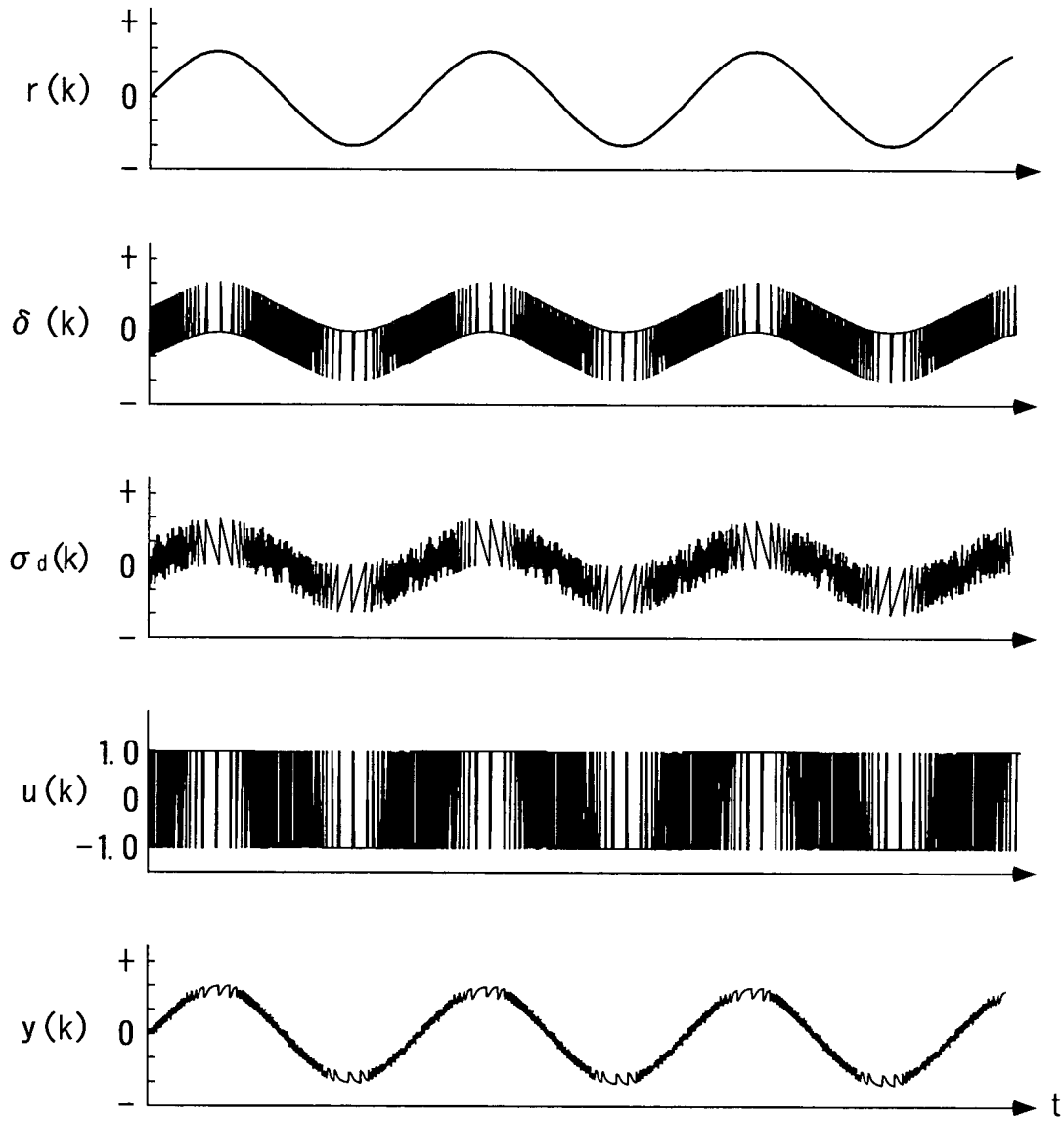
$$P(k+1) = \frac{1}{\lambda_1} \left(I - \frac{\lambda_2 P(k) \zeta(k) \zeta(k)^T}{\lambda_1 + \lambda_2 \zeta(k)^T P(k) \zeta(k)} \right) P(k) \quad \dots\dots (15)$$

Where I is a unit matrix

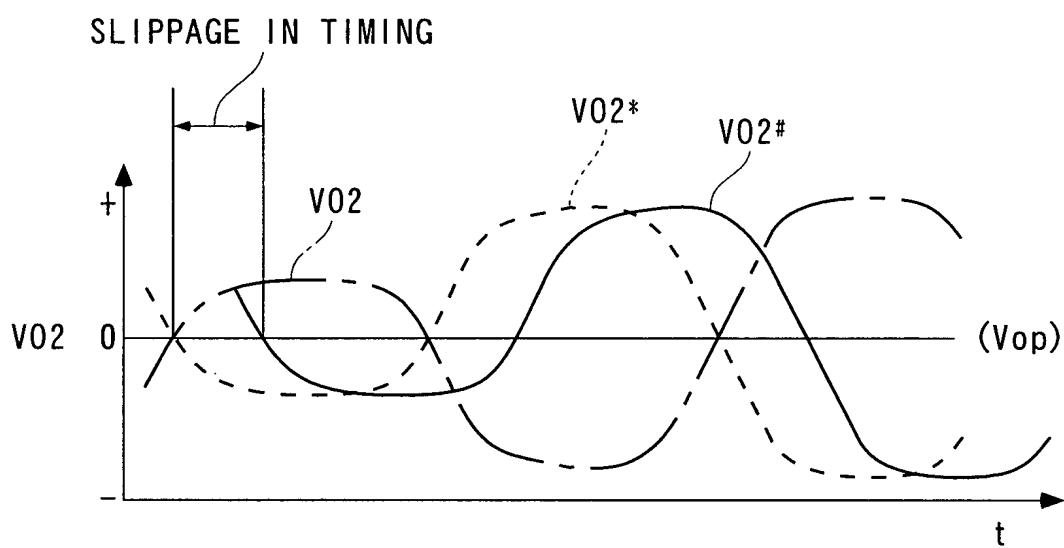
F I G . 6



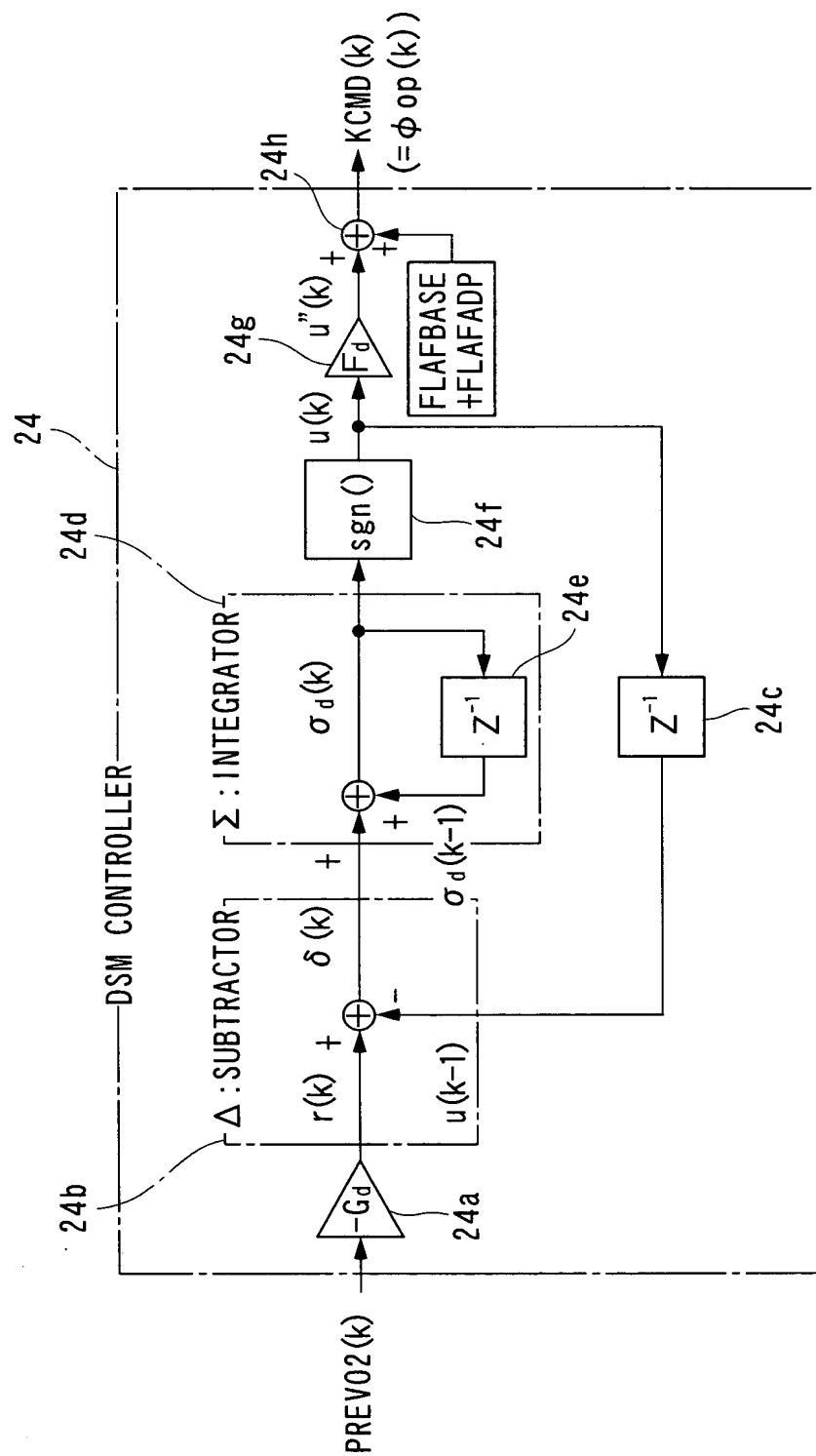
F I G . 7



F I G . 8



F I G. 9



F I G . 1 0

$$U_{s1}(k) = U_{eq}(k) + U_{rch}(k) + U_{adp}(k) \quad \dots\dots (26)$$

$$U_{eq}(k) = \frac{-1}{S1 \cdot b1} \{ [S1 \cdot (a1 - 1) + S2] \cdot V02(k+dt) + (S1 \cdot a2 - S2) \cdot V02(k+dt-1) \} \quad \dots\dots (27)$$

$$U_{rch}(k) = \frac{-F}{S1 \cdot b1} \cdot \sigma(k+dt) \quad \dots\dots (28)$$

$$U_{adp}(k) = \frac{-G}{S1 \cdot b1} \sum_{i=0}^{k+dt} \Delta T \cdot \sigma(i) \quad \dots\dots (29)$$

F I G . 1 1

$$\sigma_{PRE}(k) = S_1 \cdot PREV02(k) + S_2 \cdot PREV02(k-1) \quad \dots\dots (30)$$

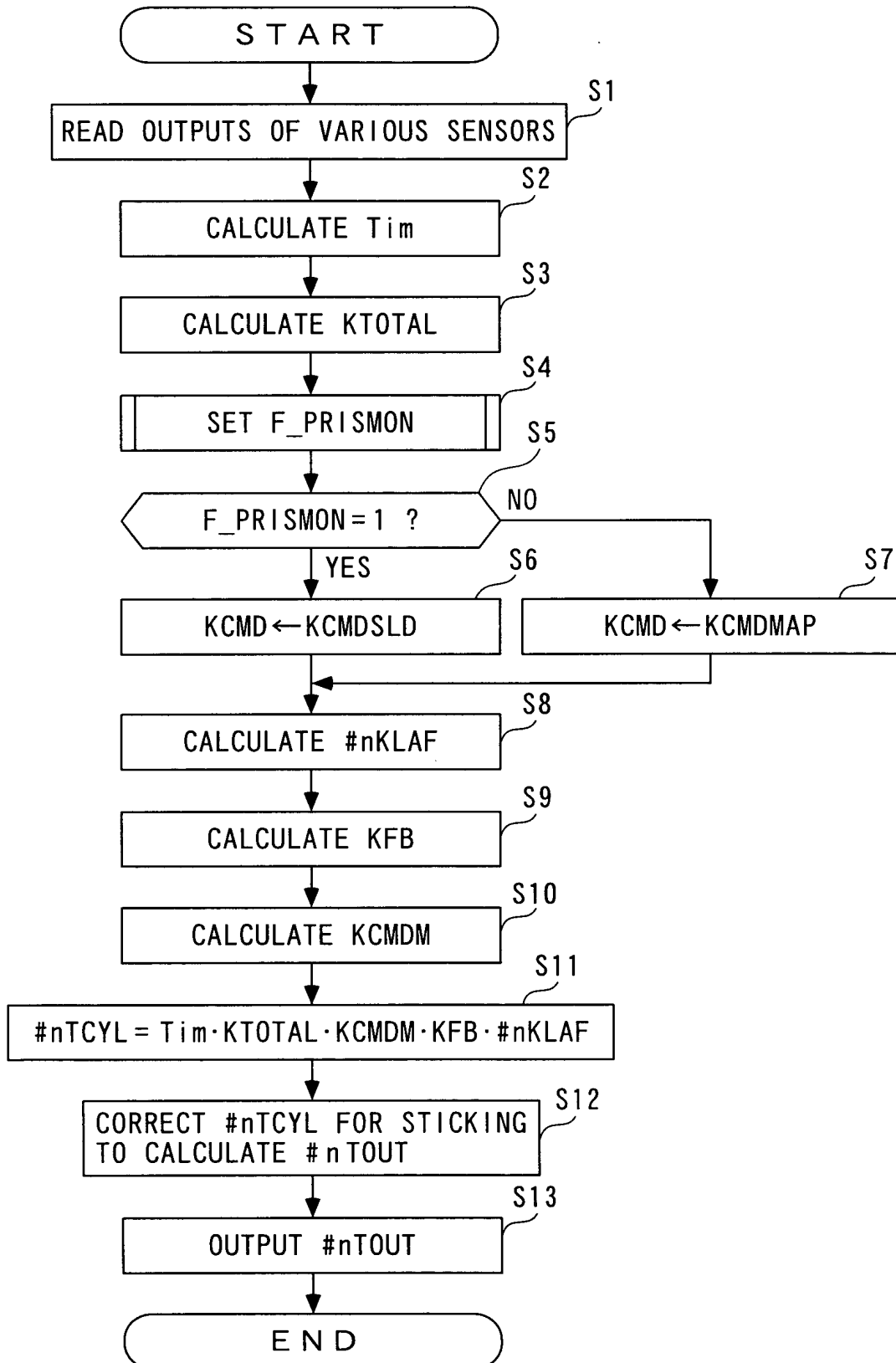
$$U_{sl}(k) = U_{eq}(k) + U_{rch}(k) + U_{adp}(k) \quad \dots\dots (31)$$

$$U_{eq}(k) = \frac{-1}{S_1 \cdot b_1} \{ [S_1 \cdot (a_1 - 1) + S_2] \cdot PREV02(k) + (S_1 \cdot a_2 - S_2) \cdot PREV02(k-1) \} \quad \dots\dots (32)$$

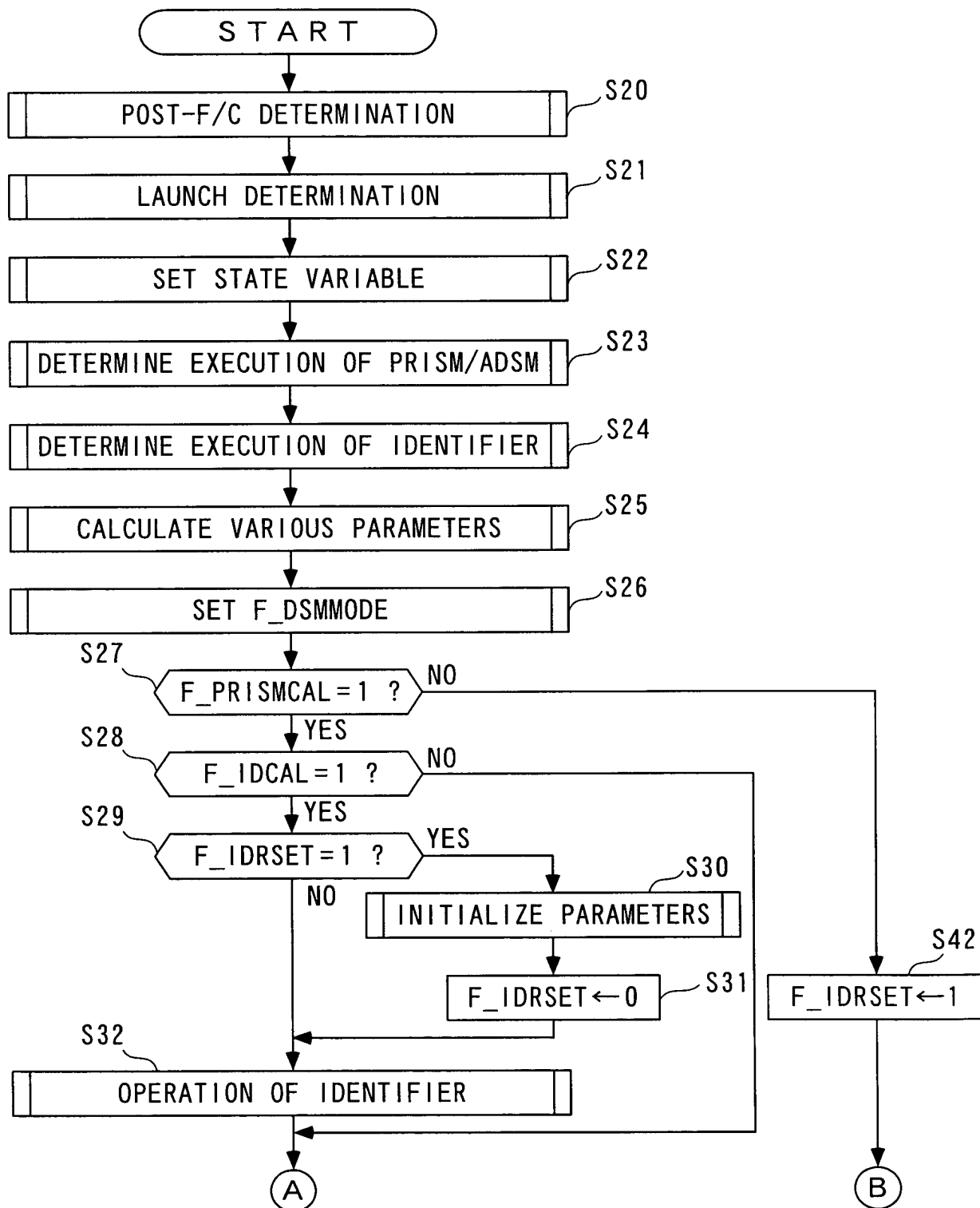
$$U_{rch}(k) = \frac{-F}{S_1 \cdot b_1} \cdot \sigma_{PRE}(k) \quad \dots\dots (33)$$

$$U_{adp}(k) = \frac{-G}{S_1 \cdot b_1} \sum_{i=0}^k \Delta T \cdot \sigma_{PRE}(i) \quad \dots\dots (34)$$

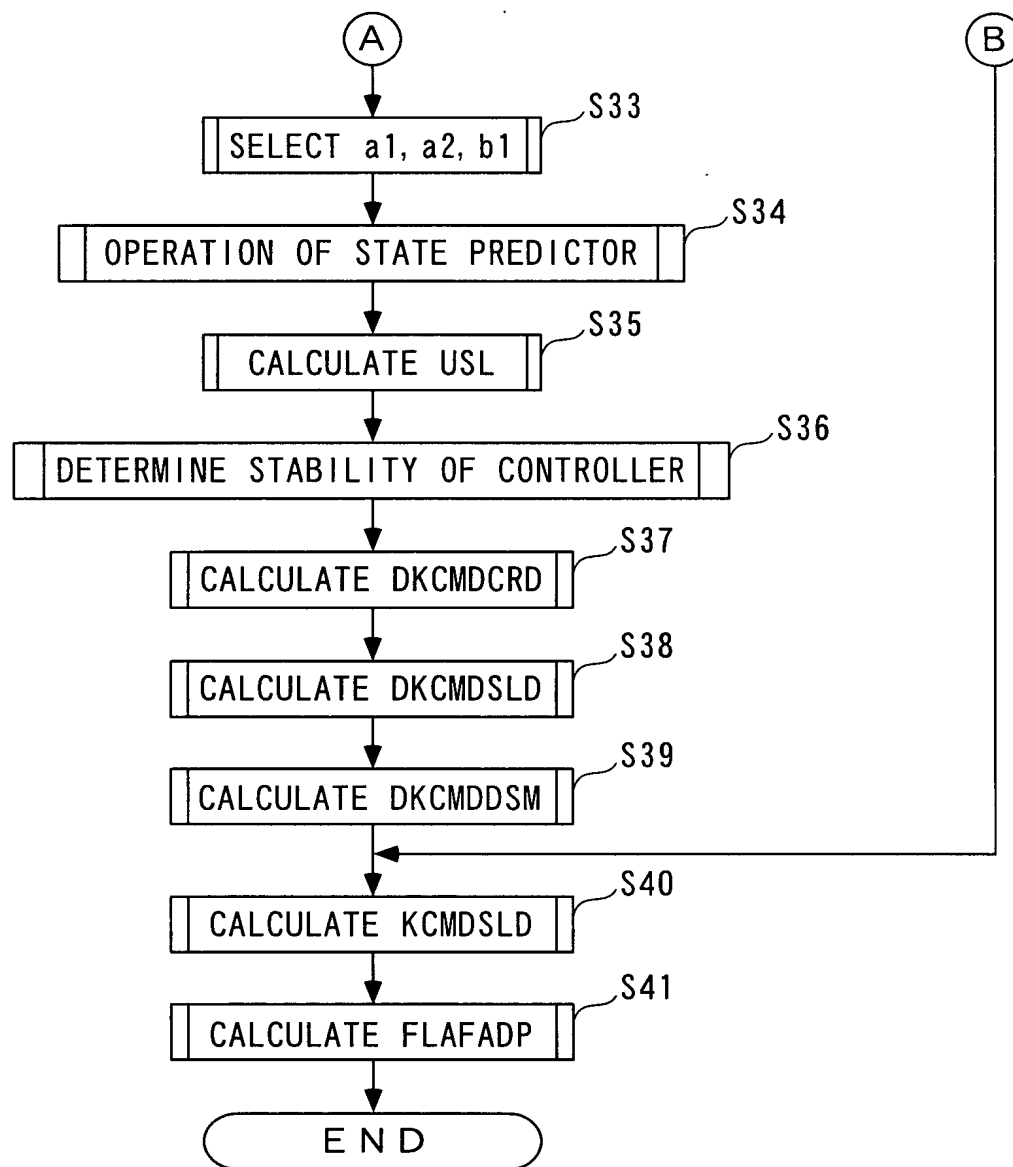
F I G. 1 2



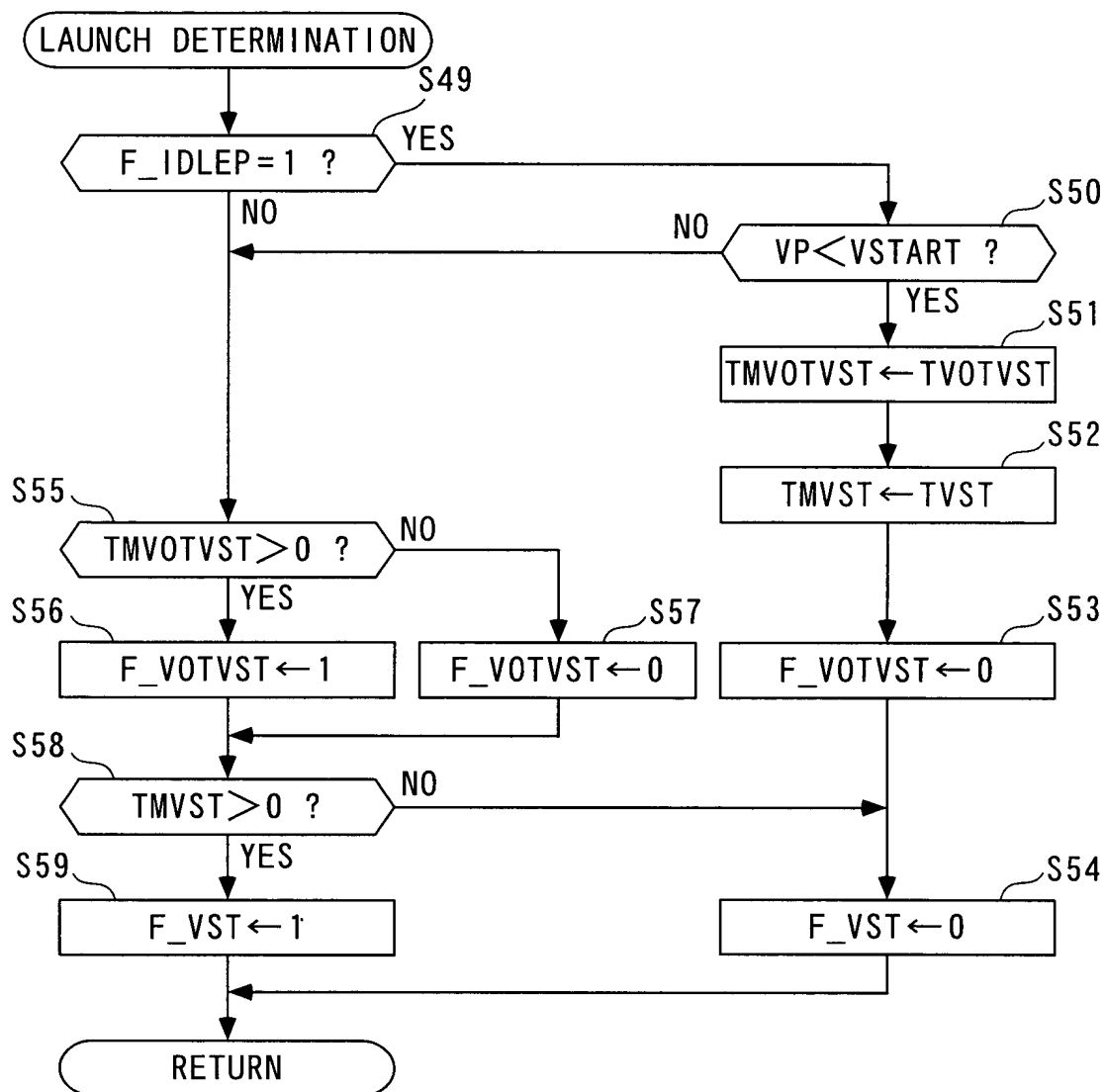
F I G. 1 3



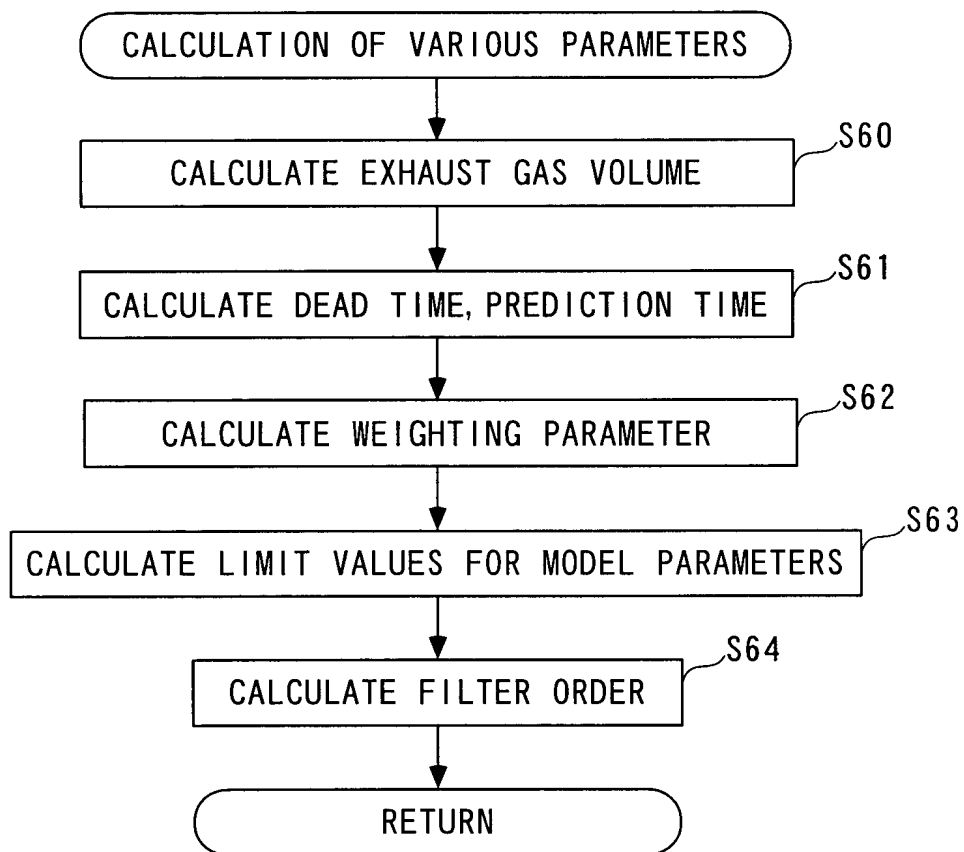
F I G . 1 4



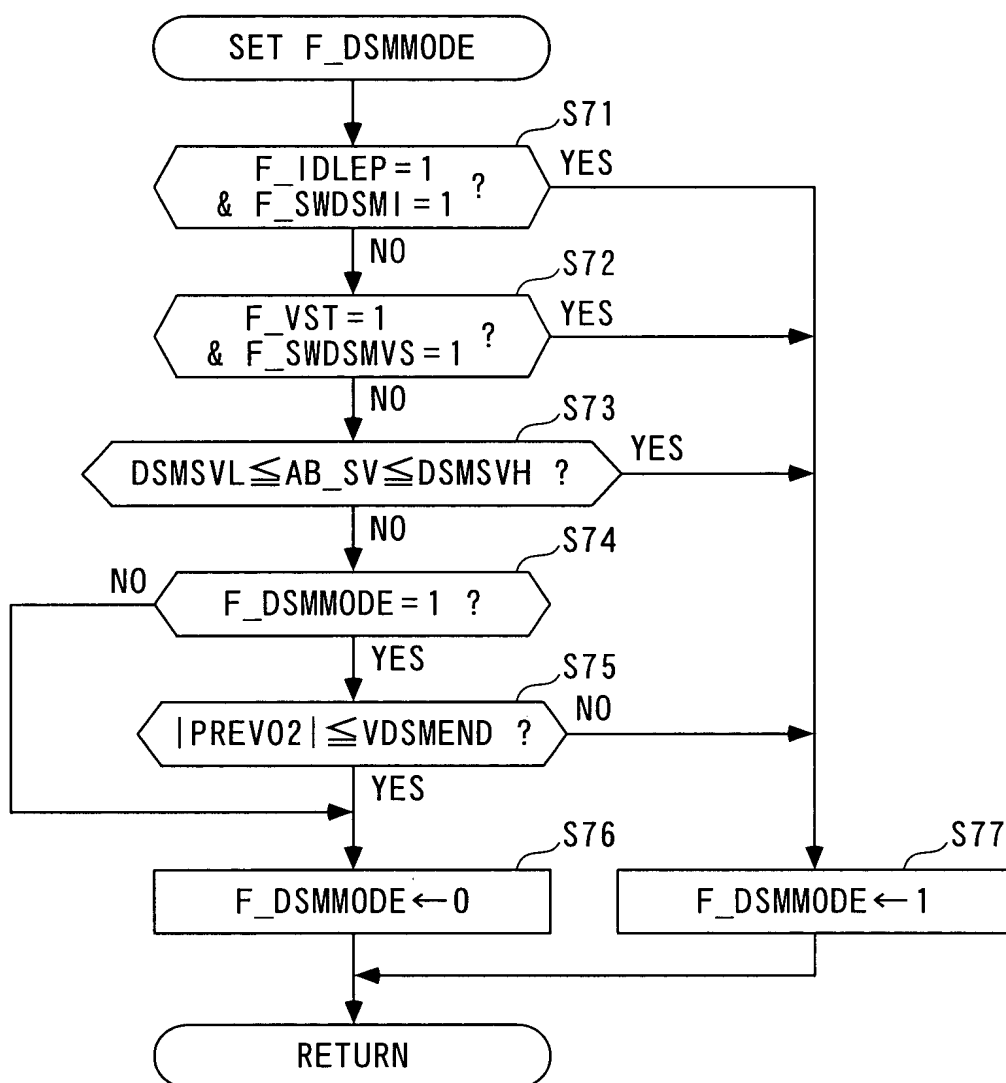
F I G . 1 5



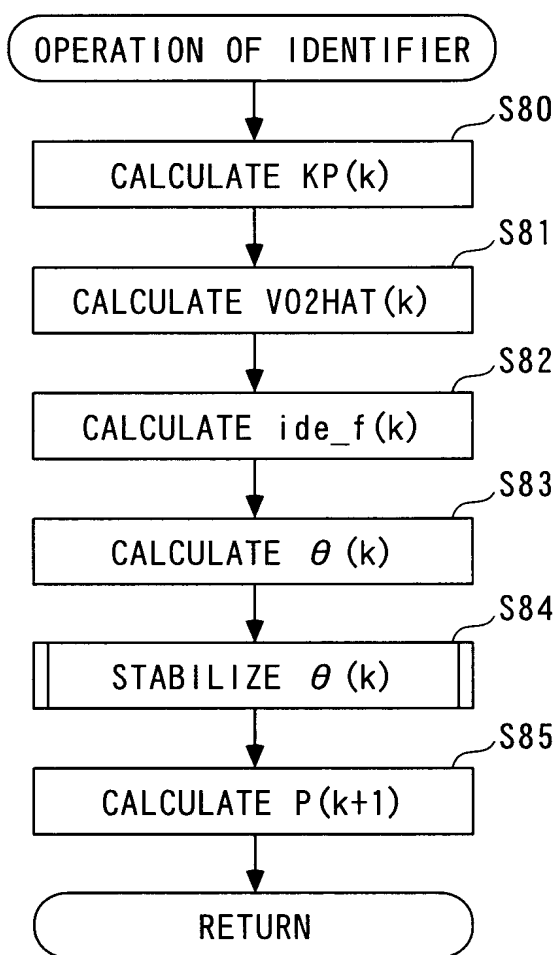
F I G . 1 6



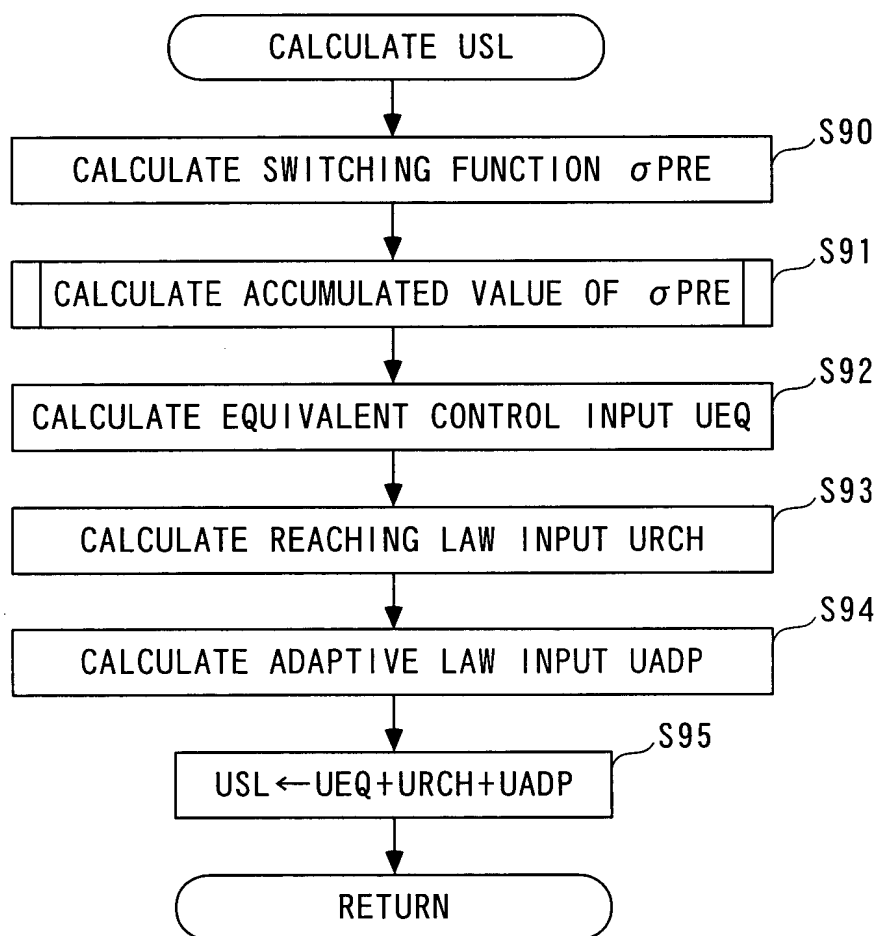
F I G . 1 7



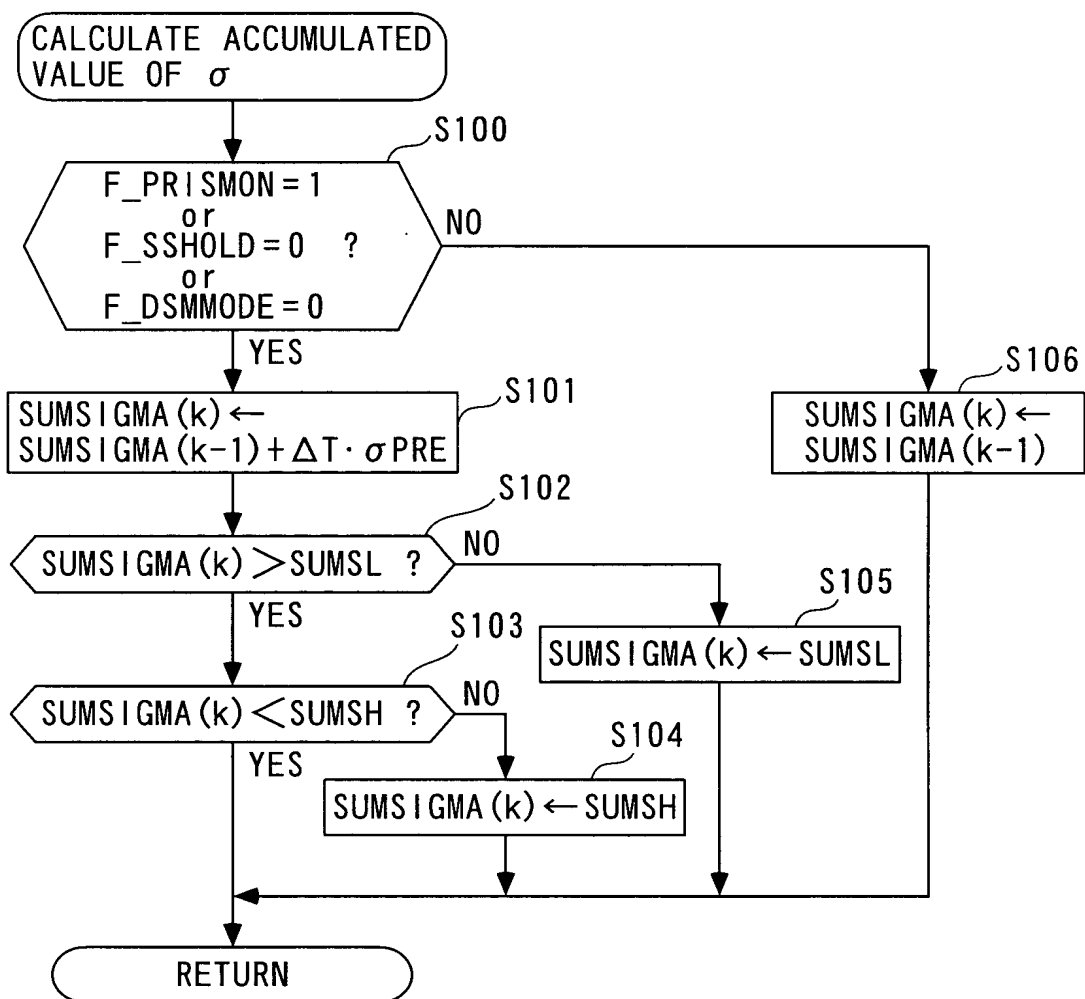
F I G . 1 8



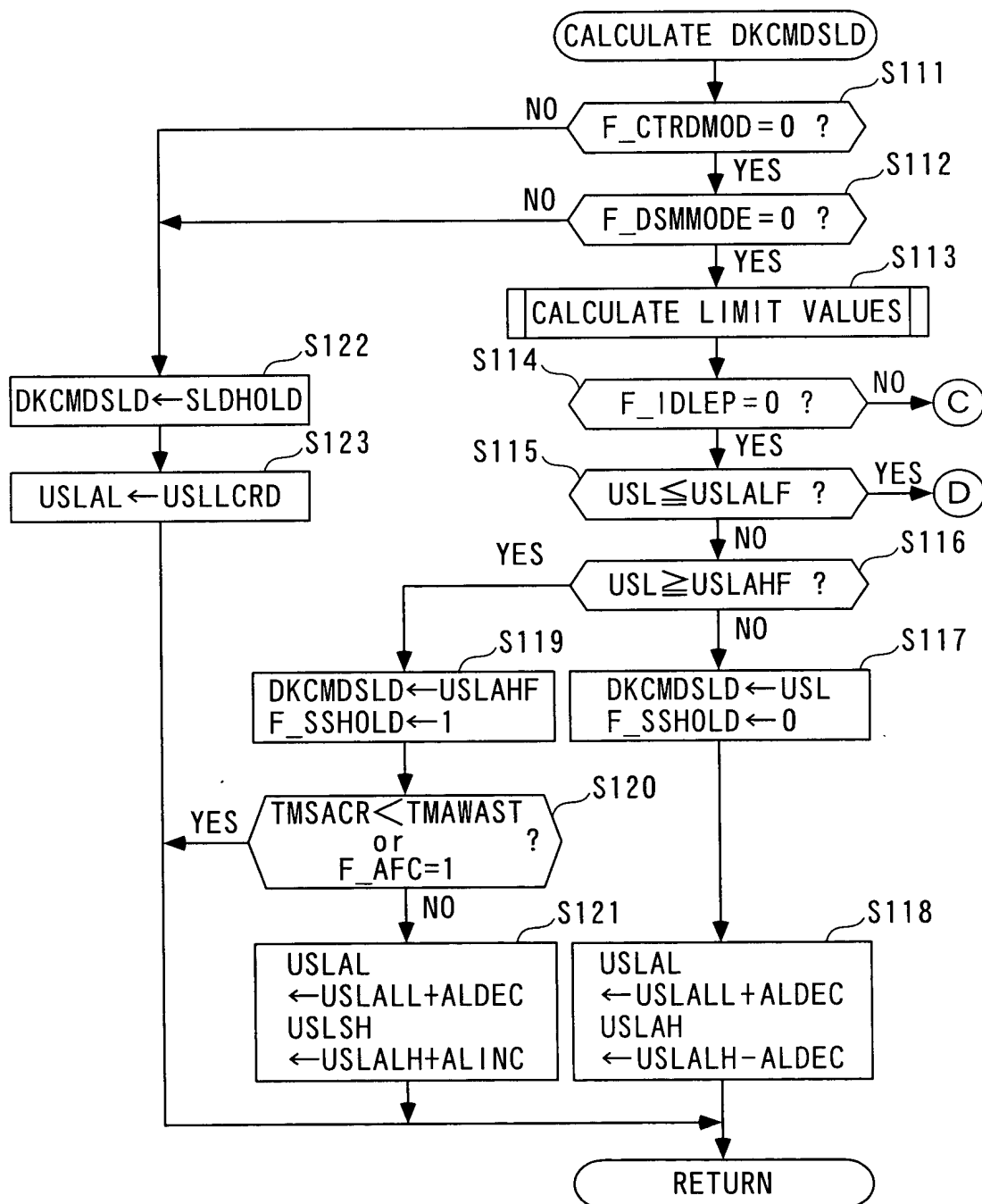
F I G . 1 9



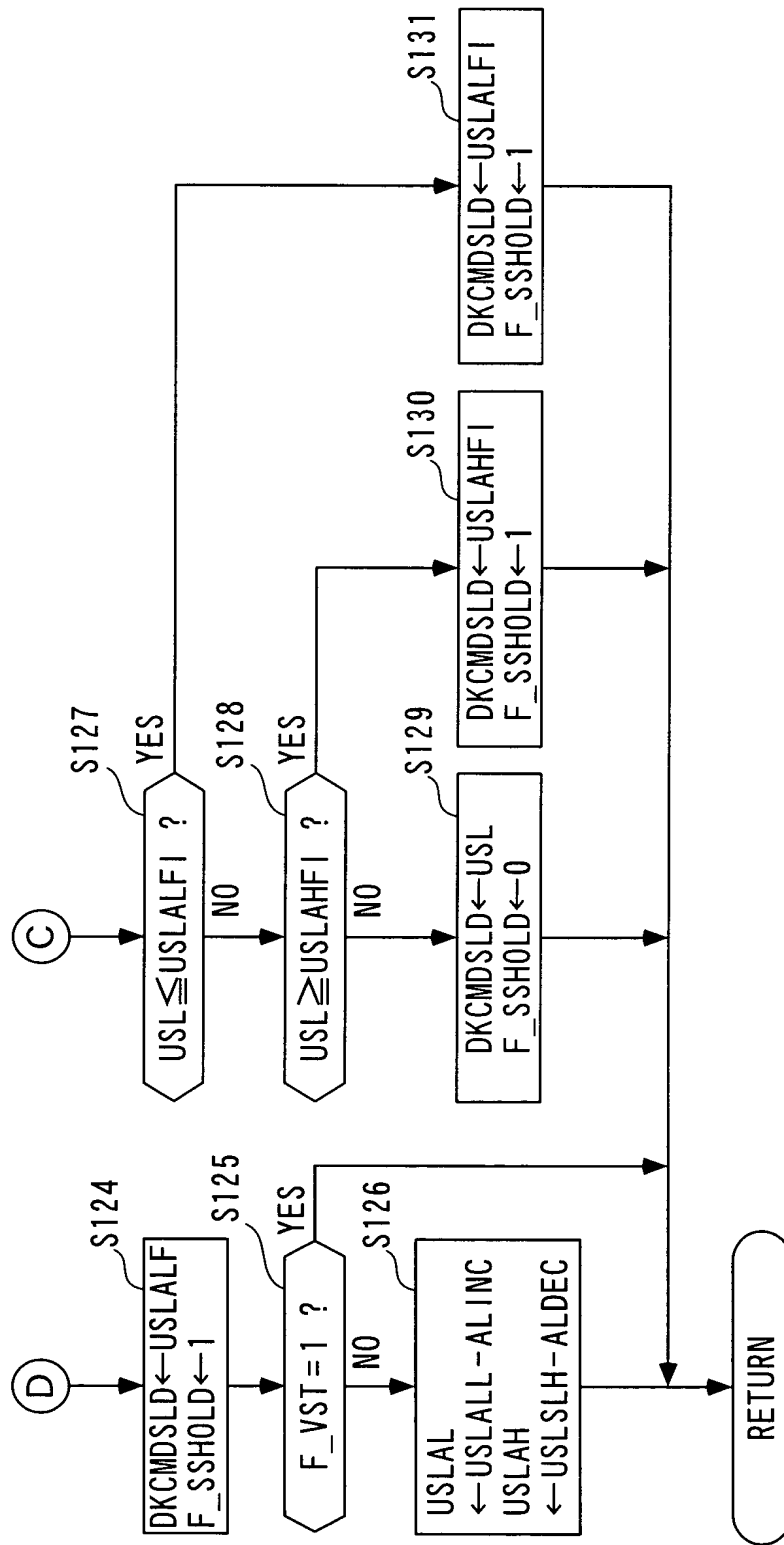
F I G . 2 0



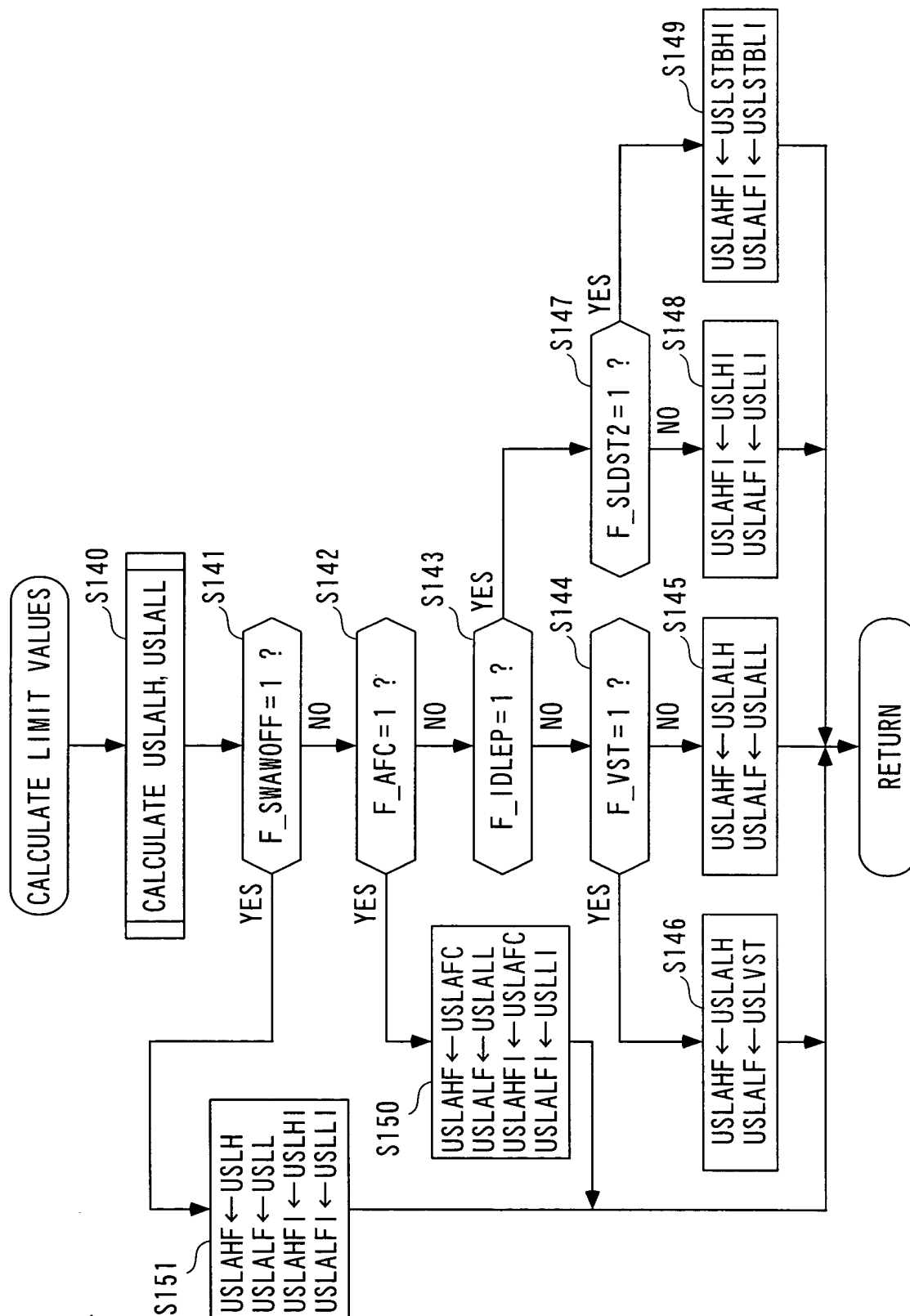
F I G . 2 1



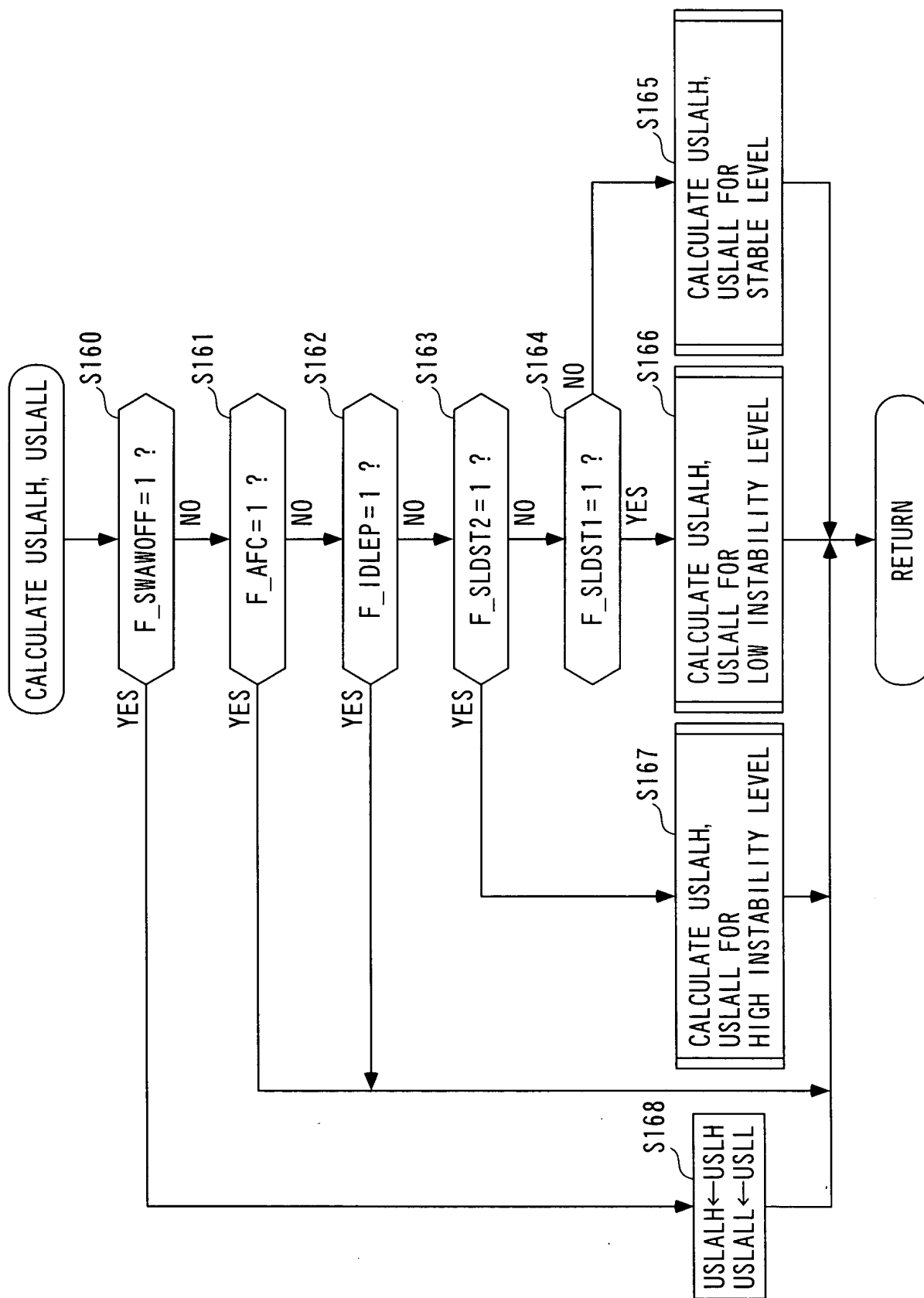
F I G . 2 2



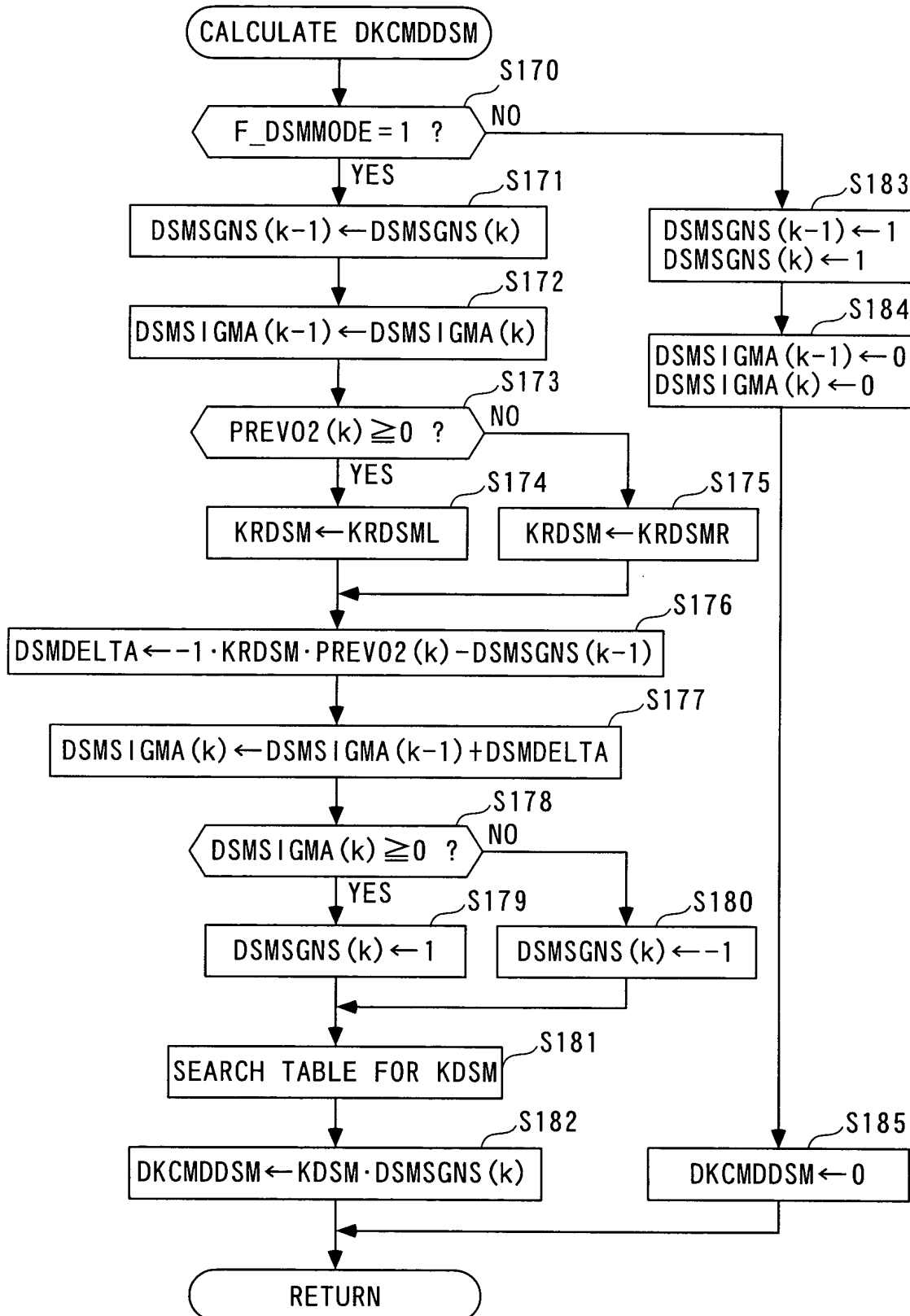
F I G . 2 3



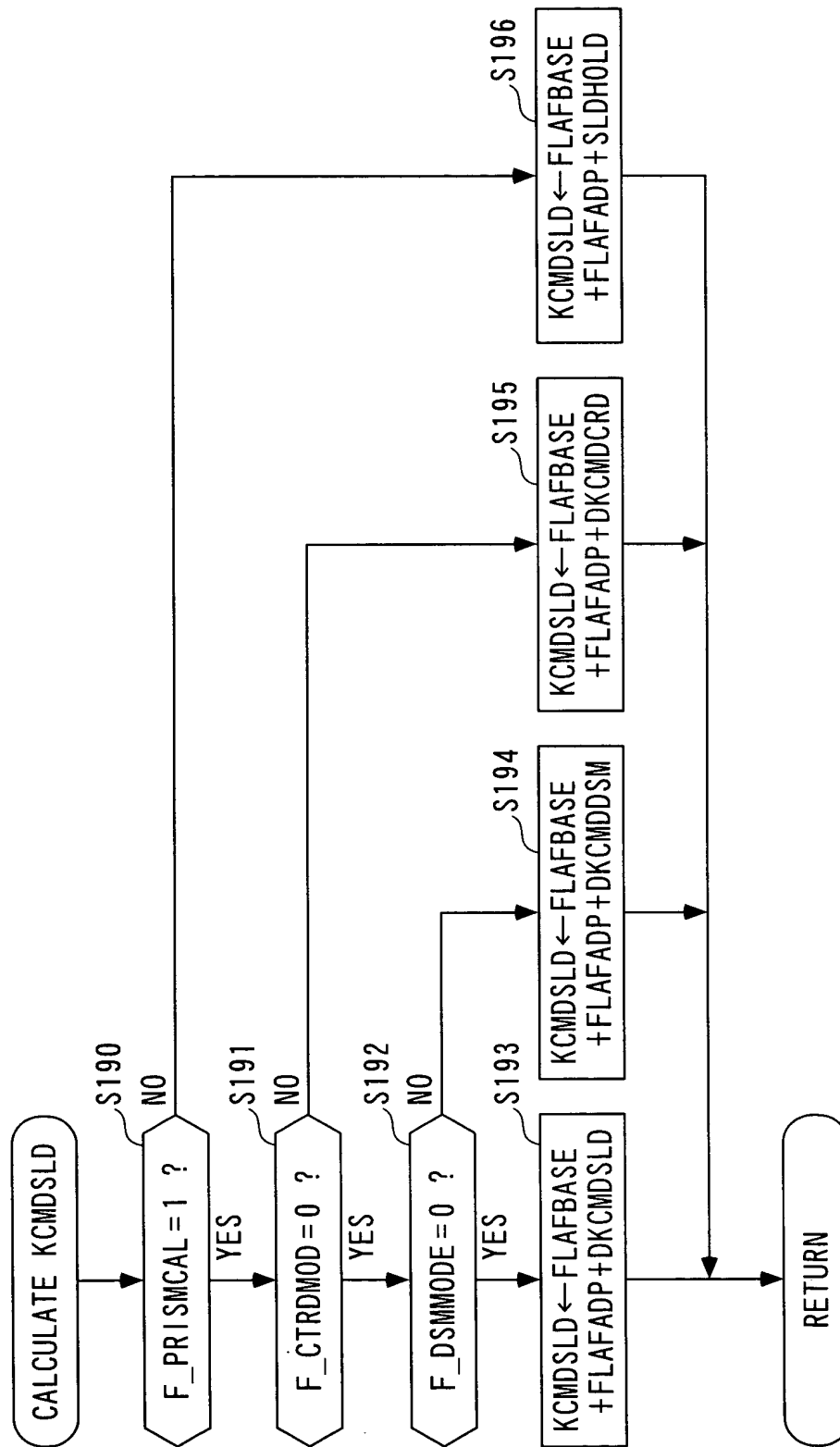
F I G . 2 4



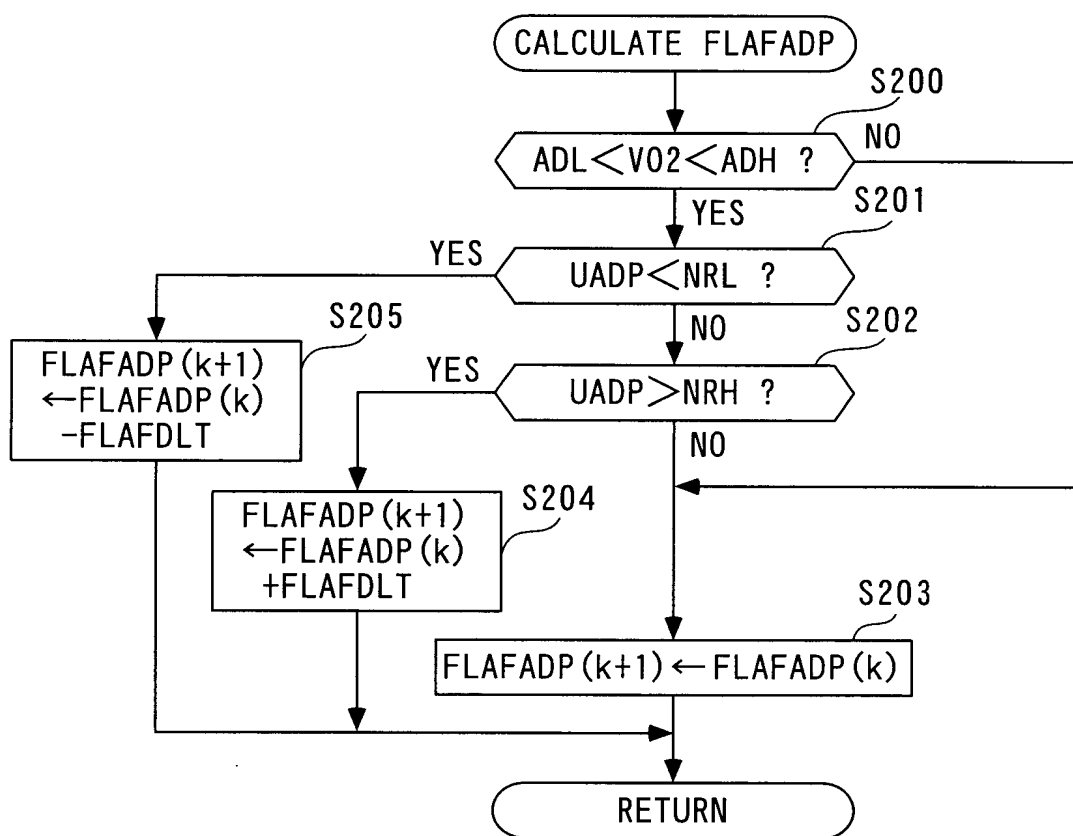
F I G . 2 5



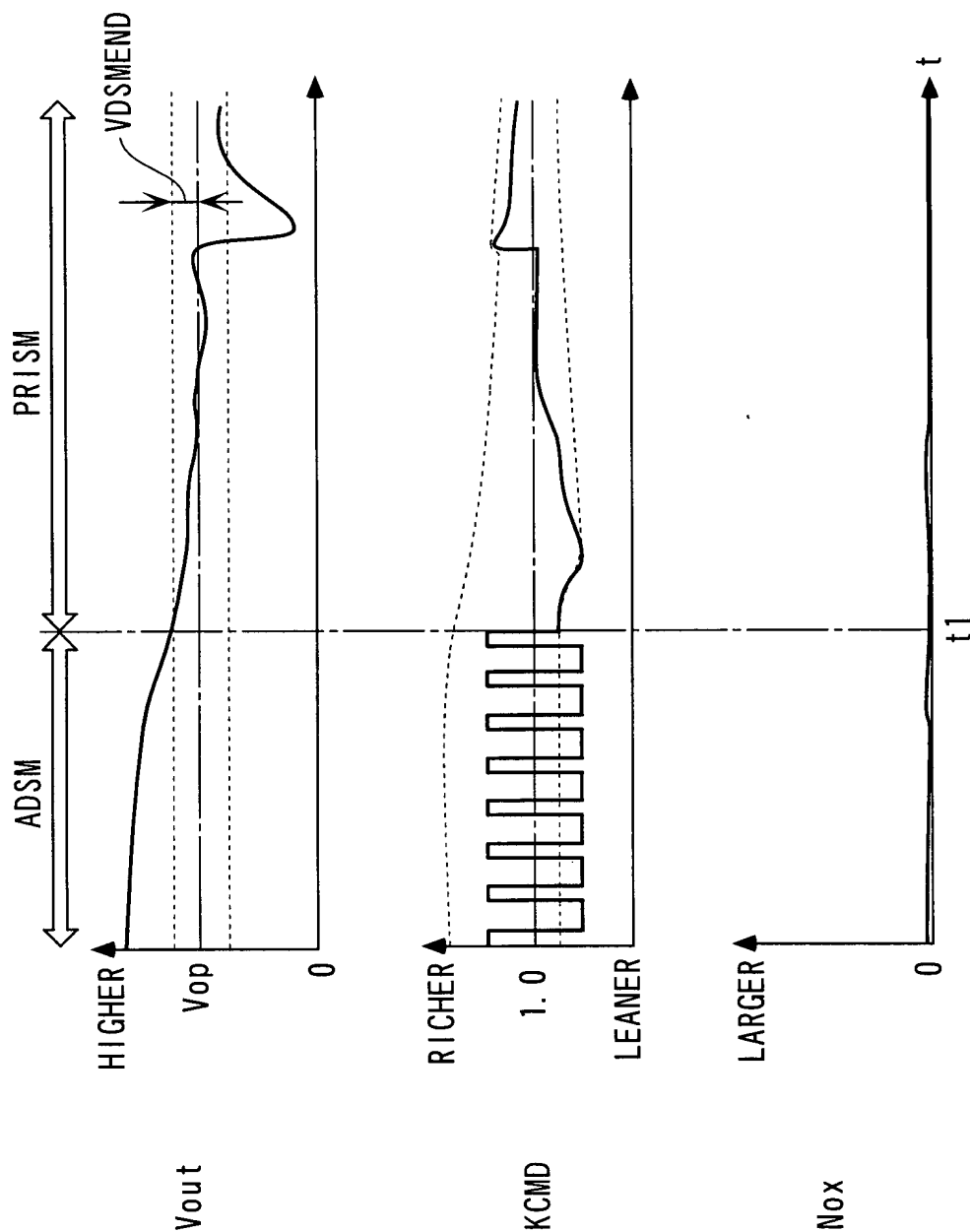
F I G. 2 6



F I G . 2 7



F I G . 2 8



F I G . 2 9

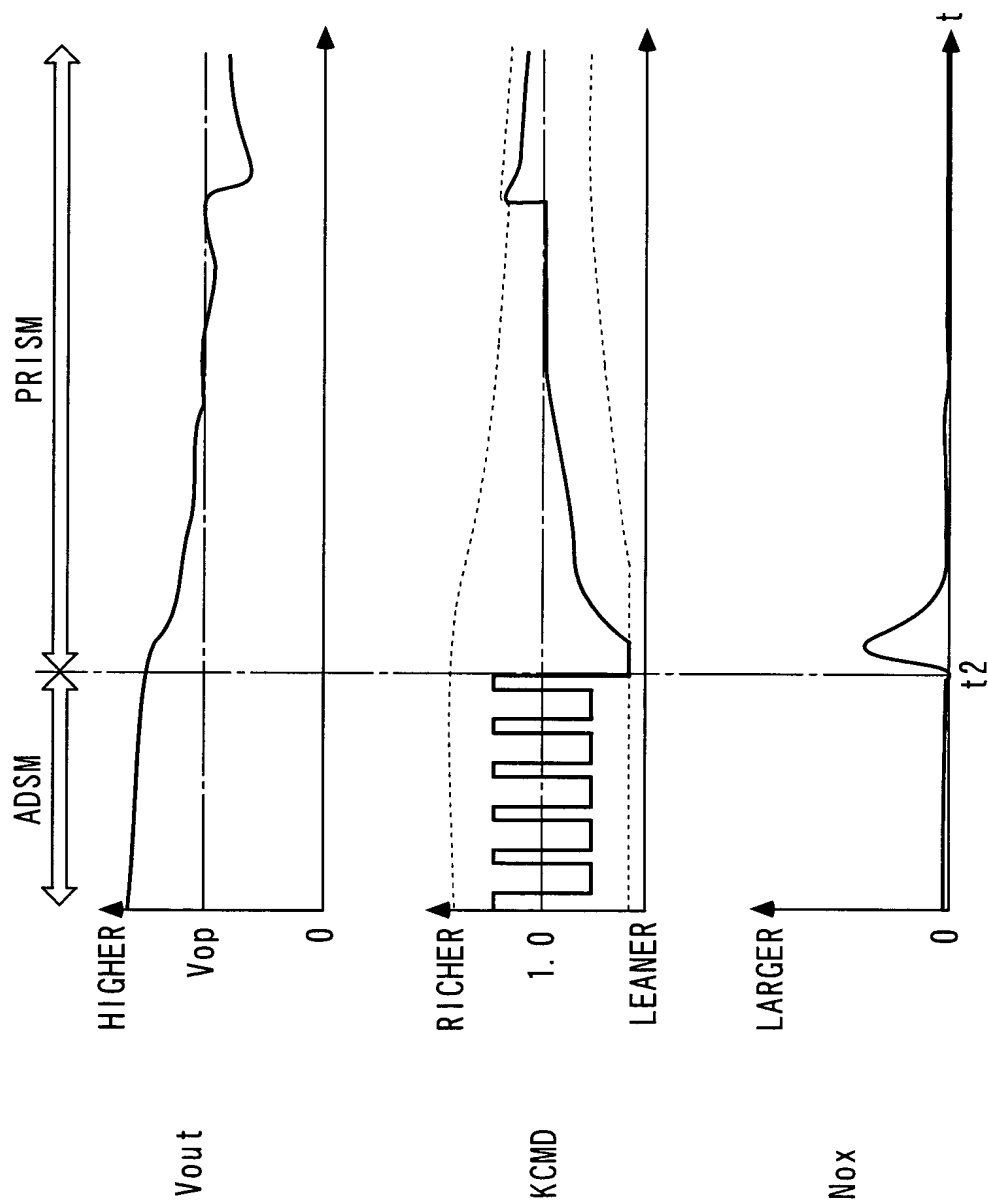


FIG. 30

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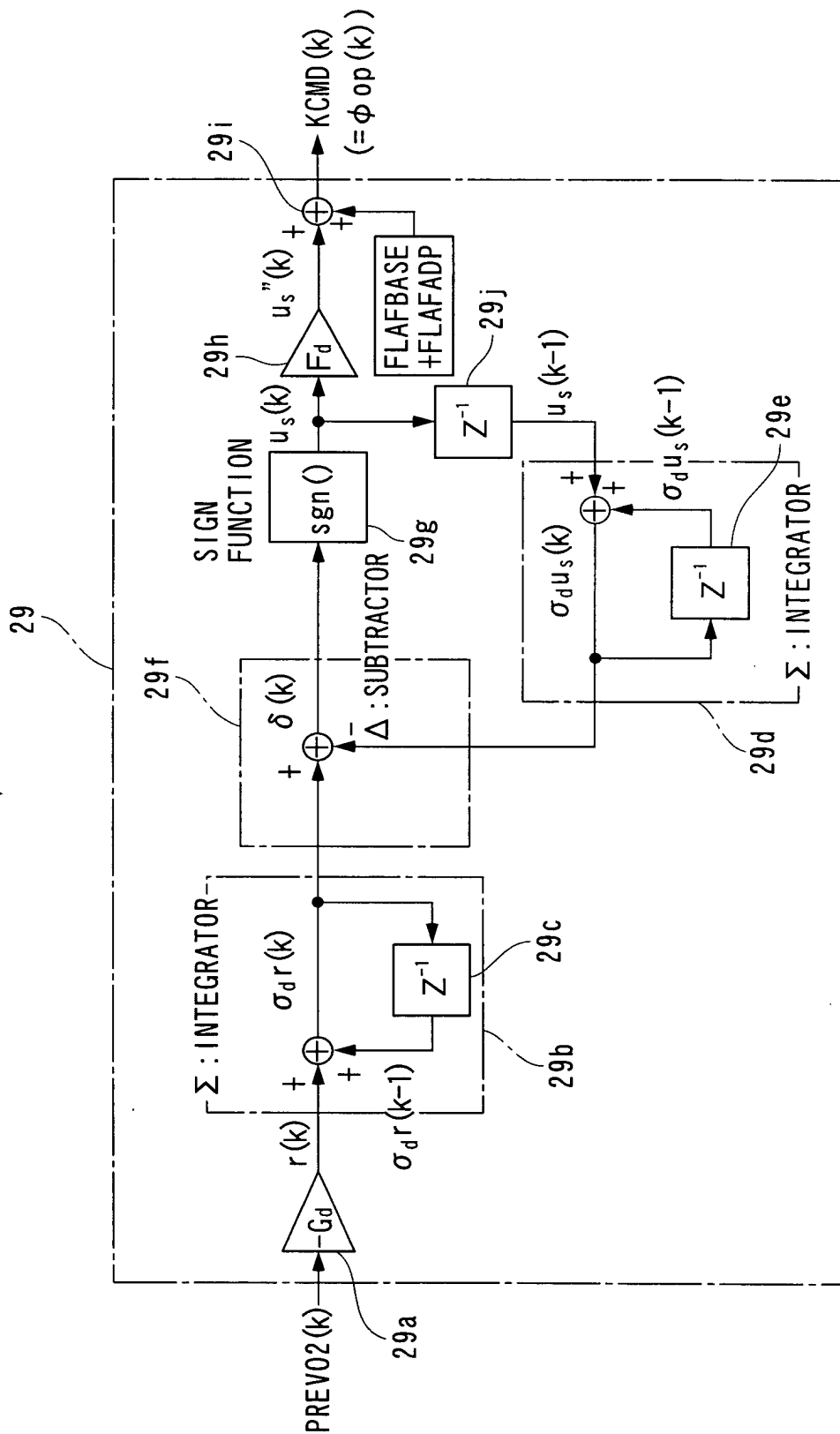


FIG. 31

